

Achievement Standard

Subject Reference Mathematics 2.5

Title Select a sample and use this to make an inference about the population

Level 2 **Credits** 3 **Assessment** Internal

Subfield Statistics and Probability

Domain Statistics

Status Expiring **Status date** 17 November 2011

This achievement standard is expiring. Assessment against the standard must take place before the expiry date set out below.

Expiry date 31 December 2012 **Date version published** 17 November 2011

This achievement standard requires selecting a sample and making inferences about the population based on appropriate sample statistics.

Achievement Criteria

	Achievement Criteria	Explanatory Notes
Achievement	<ul style="list-style-type: none"> Select a sample and use this to make an inference about the population. 	<ul style="list-style-type: none"> Students will select a sample from a population (which may be supplied as a dataset), and provide evidence of sampling method. The inference will be made in response to a given question or hypothesis. The inference will be based on appropriate sample statistics selected from mean, median, quartiles, standard deviation and proportion found using the data selected by the student.

	Achievement Criteria	Explanatory Notes
Achievement with Merit	<ul style="list-style-type: none"> Describe and justify the method used to select the sample. Justify inferences made about the population. 	<ul style="list-style-type: none"> The description of the sampling method should include sufficient detail to enable the procedure to be replicated. Students will be required to comment on whether their sample is representative of the population, or justify their sampling method with reference to their population and considerations of bias. The justification could include the use of statistical graphs and the interpretation of sample statistics.
Achievement with Excellence	<ul style="list-style-type: none"> Critically evaluate the sampling process. 	<ul style="list-style-type: none"> Evaluation could include considering: <ul style="list-style-type: none"> – limitations of, and suggesting ways to improve, the sampling process – the reliability of the sampling process – the accuracy of the results, possibly giving an interval for the inference – reference to the data distribution.

General Explanatory Notes

- This standard is derived from *Mathematics in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1992:
 - achievement objectives p. 198
 - suggested learning experiences p. 199
 - sample assessment activities pp. 200-201
 - mathematical processes pp. 26, 28.
- The question to be addressed by the student needs to be couched in broad terms so that students have a choice in selecting which statistics to calculate and use to make inferences about the population.

Replacement Information

This achievement standard and unit standard 5247 have been replaced by AS91264.

Quality Assurance

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0226